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thesis be all metallic; some of them being as yet known only in combination, as those of sulphur, of phosphorus, and some others.

But a phlogistic hypothesis might also be framed, so as to account for all the phenomena with equal facility; the principal argument in favour of it being derived from the easy reduction of metals in presence of hydrogen. The ultimate predominance of one or the other hypothesis must, in the author's estimation, depend upon the nature of ammonia, of which the supposed elements do not present phenomena analogous to those of other simple bodies. Sulphur, for instance, whether combined with hydrogen or with oxygen, has acid properties; but nitrogen combined with one of those bodies is an alkali, and with the other an acid; so that in nitrate of ammonia, nitrogen is neutralized by nitrogen.

Mr. Davy finally adduces some new facts which accord with Mr. Dalton's hypothesis respecting the apparent union of ultimate atoms in a given relation *by weight*; and he also mentions some new instances in conformity to the observation of M. Gay-Lussac, that the different compounds of gaseous bodies are related in simple arithmetical proportions *by measure*.

*The Case of a Man, who died in consequence of the Bite of a Rattle-snake; with an Account of the Effects produced by the Poison.* By Everard Home, Esq. F.R.S. Read December 21, 1809. [Phil. Trans. 1810, p. 75.]

Thomas Soper, 26 years of age, was bitten by a rattlesnake on the 17th of October. The snake had refused to bite a ruler with which it had been teased, but as soon as the man introduced his hand into the cage for the purpose of taking out the ruler which had dropped in by accident, the snake seized his hand, and made two bites in succession, one on the thumb, and another on the fore-finger. The first person who saw him immediately after the bite supposed him to be intoxicated, and treated him accordingly; but though it is known that he had been drinking, Mr. Home is inclined to ascribe the incoherence of his language and behaviour to the effect of the poison.

In the course of half an hour a swelling had taken place on his hand, and half way up the fore-arm, with a great deal of pain. In an hour and half it reached the elbow; in two hours it extended half way up toward the shoulder, with much pain in the axilla. The man's answers were incoherent, his skin cold, his pulse 100 in a minute, and he complained of sickness at the stomach.

In the course of eight or nine hours the pain became extremely violent, the swelling very tense, so that the arteries could not be perceived with accuracy, and no pulse could be felt in any part of it. He was seized with fits of faintness every quarter of an hour.

The following morning his pulse was extremely feeble, and 132 in a minute. The swelling had not extended beyond the shoulder to the neck, but there was a fullness of that side down to the loins, with a mottled appearance from extravasation of blood. The arm conti-

nued cold, and painful when pressed, with several vesications near the elbow. The skin of the whole arm had a livid appearance, similar to what is met with in the dead body after putrefaction has begun to take place.

On the third day in the morning his pulse was scarcely perceptible ; his extremities were cold ; and the vesications were larger : but the swelling of the arm was diminished, and he had sensation in it down to the fingers. On the fourth, fifth, sixth, seventh, eighth, and ninth days the swelling continued subsiding, but more painful ; and his pulse rising in strength, and diminishing in frequency. But on the tenth, his pulse had increased, and the arm was again swelled and inflamed. On the twelfth a large slough began to separate from the inside of the arm, below the axilla ; and on the following day a large abscess had formed on the outside of the elbow, and discharged a quantity of reddish matter, with slough of cellular membrane floating in it.

On the sixteenth, it appeared that mortification had taken place on the skin near the axilla ; and on the eighteenth he died.

The body was examined after death, and the appearances on dissection are described by Mr. Home. The most remarkable circumstance observed, was the entire separation of the skin from the muscles of the arm, with the exception of two or three, to which it still adhered imperfectly by a dark-coloured cellular membrane. The fluid in the pericardium, and blood in the aorta, had an unusual frothy appearance.

In addition to the foregoing case, Mr. Home adds an account which had been sent from India to the late Dr. Russel, of a Sepoy, 60 years of age, who had been bitten by a *Cobra di Capello*, on the back part of the hand, in whom the symptoms were extremely similar to those which occurred in the case above described ; pain, faintness, sickness, with a quick and feeble pulse, swelling, discolouration, vesication, abscess, a copious dark and foetid discharge, continuing for about a week ; after which the man gradually recovered, excepting that one finger remained permanently extended.

Mr. Home also gives an account of two experiments which he made in the West Indies, on a couple of rats ; the first of which, after being bitten by a venomous snake, died in one minute after the bite ; and it is remarked, that the cellular membrane under the skin of the side bitten, was entirely destroyed.

The second rat, which was bitten one quarter of an hour afterwards by the same snake, was not so soon affected by the bite ; and bit the snake so violently in the neck, as to kill it in ten minutes. The rat itself continued lively for nearly six hours, and then died.